



School: Bath School of Music and Performing Arts

Researcher: Joseph Hyde

Project Title: Molecular Music

UOA: 33

300 Word Statement

Molecular Music grew out of the danceroom Spectroscopy (dS) project, an arts/science collaborative project exploring molecular dynamics allowing users to interact with a scientifically-accurate molecular simulation through movement in real time.

A key part of the development of dS 2.0, begun at Zentrum für Kunst und Medien (ZKM) in Karlsruhe, Germany in January 2014, was a greatly increased range of possibilities for interactions between the molecular simulation and sound. In the new version, it was possible not only for the simulation to control sonic parameters, but also for sound to be fed into the system to control the parameters of the system. This also allowed complex feedback loops in interaction between sound and simulation, producing chaotic behaviour.

Hyde led on an offshoot project specifically exploring these possibilities, titled Molecular Music. Where dS originally focused on the interaction between movement and the simulation, Molecular Music purposely removed this and focused entirely on the interaction with sound.

A solo audiovisual performance, Cloud Chamber, in which Hyde produced a live soundscape, interacting in real time (and in both directions) with the simulation, explored the chaotic behaviours produced by interaction loops, producing 'virtual cymatics'. This was commissioned for the CCRMA Stage series at Stanford University, and presented in a programme of Hyde's work in March 2014. Hyde has subsequently performed it a number of times in the US and in Europe.

Molecular Music also involved a collaboration with the Charles Hazlewood All-Star Collective, in which these techniques were used to allow the dS system to interact with the performers. This culminated in a performance of Terry Riley's Rainbow in Curved Air in the Bristol Proms at Bristol Old Vic in July 2014.

This work was summarised and presented in a paper presented by Hyde at the Generative Art Conference in Rome in December 2014.